WHAT IS CLAIMED IS:

1. A method for enhanced synthesis of biological macromolecules *in vitro*, the method comprising:

synthesizing said biological macromolecules in a reaction mix where oxidative phosphorylation is activated.

2. The method of Claim 1, wherein said synthesis of biological macromolecules comprises translation of mRNA to produce polypeptides.

3. The method of Claim 2 wherein said synthesis also comprises transcription of mRNA from a DNA template.

4. The method of Claim 2, wherein synthesis of said polypeptide is at least two fold higher than synthesis in the absence of said oxidative phosphorylation.

5. The method according to Claim 2, wherein synthesis of said polypeptide is at least three fold higher than synthesis in the absence of said oxidative phosphorylation.

6. The method of Claim 1 wherein said synthesis of biological macromolecules is performed as a batch reaction.

7. The method of Claim 1, wherein said synthesis of biological macromolecules is performed as a continuous reaction.

8. The method of Claim 1, wherein said reaction mix comprises an extract from *E. coli* grown in glucose containing medium.

9. The method of Claim 8, wherein said *E. coli* are grown in glucose and phosphate containing medium.

10. The method of Claim 8, wherein said reaction mix comprises magnesium at a concentration of from about 5 mM to about 20 mM.

11. The method of Claim 10, wherein said reaction mix is substantially free of polyethylene glycol.

12. The method according to Claim 11, wherein said reaction mix comprises one or more of spermine, spermidine and putrescine.

13. A method for *in vitro* synthesis of polypeptides in a reaction mix comprising a biological extract comprising components of polypeptide synthesis machinery, wherein such components are capable of expressing a nucleic acid encoding a desired polypeptide, the improvement comprising:

utilizing reaction mix comprises an extract from *E. coli* grown in glucose containing medium, wherein said reaction mix comprises magnesium at a concentration of from about 5 mM to about 20 mM and is substantially free of polyethylene glycol.

14. A reaction mix for synthesis of biological macromolecules *in vitro*, comprising:

a cell-free biological extract comprising components of biological macromolecule synthesis machinery, wherein oxidative phosphorylation is activated.

15. The reaction mix according to Claim 14, wherein said components are capable of utilizing an mRNA template to synthesize a polypeptide.

16. The reaction mix according to Claim 14, wherein said components are capable of utilizing a DNA template to synthesize mRNA.

17. The reaction mix according to Claim 14, wherein said cell-free biological extract comprises an extract from *E. coli* grown in glucose containing medium.

18. The reaction mix according to Claim 17, wherein said *E. coli* are grown in glucose and phosphate containing medium.

19. The reaction mix according to Claim 17, wherein said reaction mix comprises magnesium at a concentration of from about 5 mM to about 20 mM and is substantially free of polyethylene glycol.

20. The method according to Claim 19, wherein said reaction mix comprises one or more of spermine, spermidine and putrescine.

21. A method for enhanced *in vitro* synthesis of properly folded polypeptides comprising at least one disulfide bond, the improvement comprising:

synthesizing said polypeptide in a reaction mix substantially free of polyethylene glycol.